

Biographies

Joseph Kunches is the Chief of the Forecast and Analysis Branch at NOAA's Space Environment Center in Boulder, Colorado, a national and international center for space weather services. He also serves as the Secretary of the International Space Environment Service (ISES), a consortium of eleven nations plus the European Space Agency, chartered to share data and products worldwide among the member nations and organizations. He is a member of the editorial advisory board of the quarterly journal *GPS Solutions*. He is also a member of the American Geophysical Union, the Institute of Navigation, and the International Loran Association. Academic work includes a Bachelor of Science in Aerospace Engineering from the University of Notre Dame (1970) and a Masters of Basic Science from the University of Colorado, Boulder (1985).

Bill Murtagh is a space weather forecaster at NOAA's Space Environment Center in Boulder Colorado. Bill also serves as SEC's customer focus representative, and is chief of SEC's forecaster training program. Bill is a 23-year veteran of the USAF. He qualified as a meteorologist in 1983, and spent tours of duty in New York, South Carolina, Alaska, and Virginia. After qualifying as a solar analyst in 1991, Bill was selected as the instructor for the Air Force's solar radio astronomy course at the Haleakala Solar Observatory in Hawaii. He transferred to the Space Environment Center in 1997 as a space weather forecaster and liaison between NOAA/SEC and the DoD. Bill joined SEC in 2003. He is a member of the American Geophysical Union, and the American Meteorology Society.